

Amend the following claims as indicated. These claims include all claims now pending in this application and are presented in final form. Claims showing all insertions and deletions by underling and strike-through are shown in Appendix A.

1. ~~13.~~ A bio-assay array test system, comprising:

(1) a test fixture comprising:

(a) a bio-assay device comprising a plurality of multiple-port signal paths, each multiple-port signal path having at least one signal input port and one signal output port, the multiple-port signal path operable to support the propagation of a test signal at one or more frequencies from 10 MHz to 1000 GHz and comprising:

(i) a transmission line connected between the at least one signal input port and the at least one signal output port;

(ii) a ground element; and

(iii) a dielectric substrate attached between the transmission line and ground element; and

(b) a plurality of sample cavities, each of said sample cavities configured to retain a volume of sample adjacent to at least one of said plurality of multiple-port signal paths, whereby an input test signal propagating along the at least one multiple-port signal path is electromagnetically coupled to the adjacently located sample;

(2) a measurement system having an output connected to the at least one signal input port of the multiple-port signal path and an input connected to the at least one signal output port of the multiple-port signal path, the measurement system configured to transmit, at one or more predefined frequencies, the input test signals to one or more of the plurality of multiple-port signal paths and to receive a modulated test signals from one or more of the plurality of multiple-port signal paths; and

(3) a computer connected to the measurement system and configured to control the measurement system's transmission of the input test signal and reception of the modulated test signal.

2. ~~36~~¹ The bio-assay array test system of claim ~~13~~¹, wherein the at least a portion of the signal path comprises a coplanar waveguide transmission line structure.

3. ~~37~~¹ The bio-assay array test system of claim ~~13~~¹, wherein the at least a portion of the signal path comprises a microstrip transmission line structure.

02 4. ~~38~~¹ The bio-assay array test system of claim ~~13~~¹, wherein the at least a portion of the signal path comprises a coaxial transmission line structure.

5. ~~39~~¹ The bio-assay array test system of claim ~~13~~¹, wherein the at least a portion of the signal path comprises a slotline structure.

6. ~~40~~¹ The bio-assay array test system of claim ~~13~~¹, wherein the molecular binding region comprises a drug receptor.

03 7. ~~41~~¹ The bio-assay array test system of claim ~~13~~¹, wherein the molecular binding region comprises one or more cells.

REMARKS

I. Status of the Application

This response and amendment is being filed in response to the office action of January 2, 2002.

Claim 13 was indicated to be allowable. All other claims have been amended to depend from claim 13 or have been cancelled, the cancelled claims including all claims that contained language considered to be vague by Examiner Chin. Claim 13 has been amended to clarify the relationship of the elements of the claim to each other, but has not been substantively amended.

Although the record indicates that Examiner Chin can clearly see and understand the elements of claim 13 and the relationship of the elements to each other, Applicant was concerned that others, less familiar with the device being claimed, might be confused by the pattern of